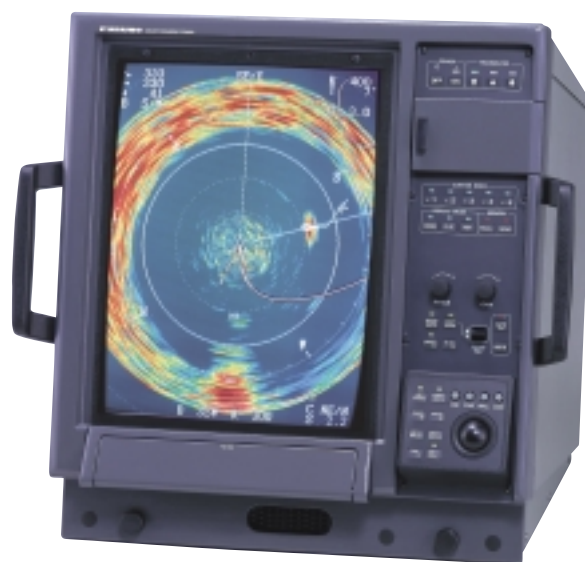


## FULL-CIRCLE COLOR SCANNING SONAR

Model CSH-84

- Instant fish detection using a 360° omni-directional high power transmission
- Simplified observation and distribution analysis of the targeted fish species
- Easy to see 21-inch, 16-color high resolution CRT (VGA) display
- Rapid reset user-programmable function keys for quick setting the sonar operating parameters as fishing conditions change
- Quick determination of the fish school's location and distribution
- Several unique features: Target Lock, Off-center, Net Shooting Mark, Event Mark, Estimate Marks and Auto Tilt Scanning
- Available in one of several optimized fishing frequencies including 81, 94 or 107 kHz



The FURUNO CSH-84 is a new high-frequency Color Scanning Sonar primarily designed for purse seiners and trawlers. It instantly displays the underwater situation for 360 degrees all around your vessel. The high-resolution 21-inch, 16-color display clearly shows all fish schools present in the vessel's immediate area.

There are three basic display modes: Full-Circle Sonar, Sonar/Sounder combination and Sonar/Historical display. Other unique operating features include True Motion, Automatic Tilt Scanning, Audio Search, Off-center, Target Lock and Estimate Marks. Fish within an Estimate Mark are presented in a zoomed window along with a histogram showing the strength of the echo levels. This graphic presentation helps to assess the concentration of the targeted fish. Two Estimate

Marks can be entered and one can be presented in the Target Slice Mode. This mode divides the fish targets into several depth layers to analyze the vertical distribution of the fish school. These presentations allow the comparison of the two fish schools and are very helpful in determining which one should be targeted. The improved Target Lock feature allows manual acquisition and automatic tracking of the selected fish school.

Target Lock mark follows the various movements of the selected fish school.

External sensors providing vessel position, heading, speed, depth and water temperature may be input. The CSH-84 will then display vessel position, speed, heading, course, depth, surface water temperature as well as operate in its innovative True Motion mode.

## SPECIFICATIONS OF CSH-84

### 1. Display

High-resolution 21-inch CRT, 640 (H) x 480 (V) dots

### 2. Presentation Color

Echoes in 16 colors, Marks in 4 colors

### 3. Frequency (specify when ordering)

81, 94 or 107 kHz

### 4. Presentation Modes

Full-circle, Full-circle+E/S combination, and Full-circle+Historical Display in Head-up, North-up\* or True Motion\*

\*Appropriate sensors required

### 5. Range Scales

75 - 2,000 m

### 6. Pulselength

0.5 to 40 ms (depending on selected range scales)

### 7. Beamwidth (at -6 dB)

TX: 360° (hor) x 12° (ver)\*

RX: 11° (hor)\* x 12° (ver)\*

\*depending on operating frequency

### 8. Tilt Range

Manual control: -5° to 60° (downward) in 1° steps

Automatic tilt scan

### 9. Hull Unit

CSH-81080 CSH-81120

Travel: 800 mm 1200 mm

Retraction Time: 16 seconds 22 seconds

Lowering Time: 15 seconds 20 seconds

Max Ship Speed: 18 knots 18 knots

(Max Raise/Lower Speed): (15 knots) (15 knots)

### 10. Audio Search

30°, 60°, 90°, 180°, 330°

Audio Output: 2 W

Frequency: 1.1 kHz

### ENVIRONMENT (IEC60945 test method)

Temperature: -15°C to +55°C (Display Unit)

### POWER SUPPLY

- 100 VAC, 50/60 Hz, 1ø, 1.5 kVA (2.5 kVA max)
- 115/230 VAC with optional stepdown transformer
- 24/32 VDC with optional DC-AC inverters

### EQUIPMENT LIST (specify operating frequency)

#### Standard

1. Display Unit CSH-8400 with handgrip set
2. Transmitter Unit CSH-810
3. Receiver Unit CSH-820
4. Hull Unit (specify when ordering)  
CSH-81080 (800 mm travel)  
CSH-81120 (1200 mm travel)
5. Remote Controller CSH-116
6. Data Interface Unit CS-120A
7. Power Supply Unit CSH-880
8. Installation materials and spare parts

#### Optional

1. DC-AC Inverters TR-2435 / TR-24100 for 24VDC
2. Stepdown Transformer PT-400
3. Net Sonde Interface CS-170
4. Echo Sounder Interface VI-1100A

### Display unit CSH-2400

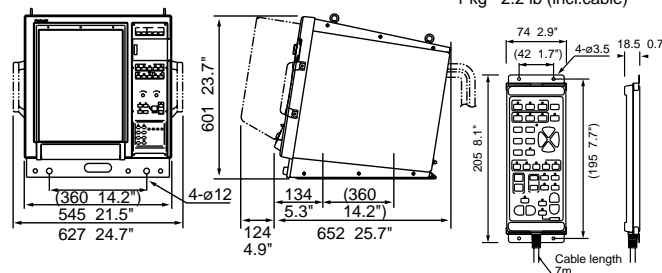
66 kg 145 lb

### Remote controller

(with 7m cable)

CSH-116

1 kg 2.2 lb (incl.cable)



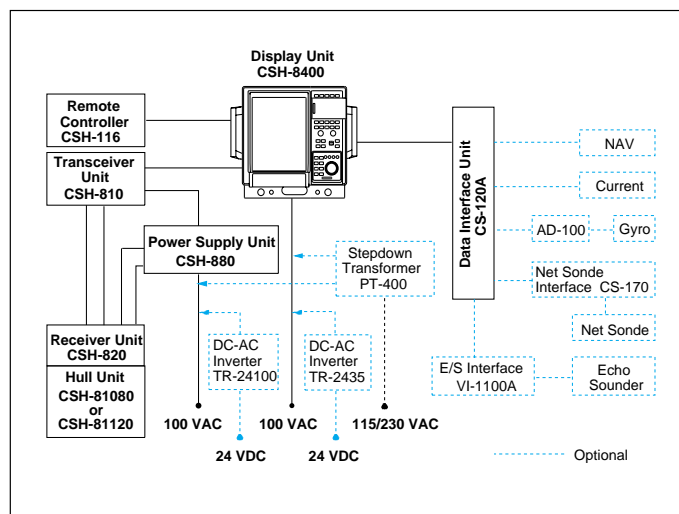
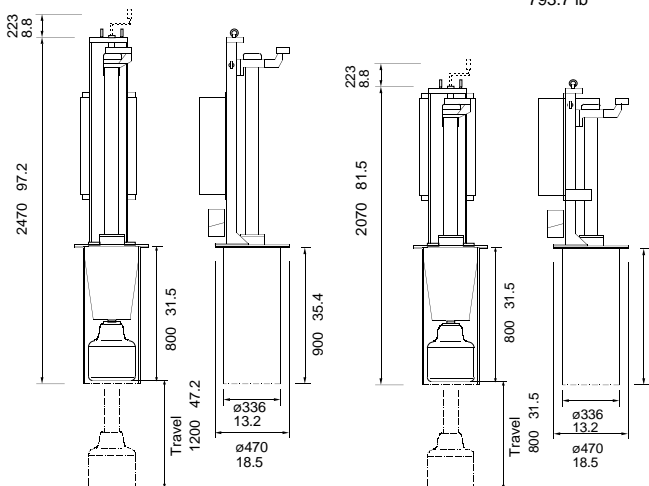
### Hull unit

1200 mm travel

395 kg  
870.8 lb

800 mm travel

360 kg  
793.7 lb



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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